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U. S. Department of Agriculture

# CARE-REPAIR-SHARE

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A MANUAL  
for the  
1943  
FARM  
MACHINERY  
CAMPAIGN

*Keep 'em*  
**ROLLING**  
*on the*  
**FARM FRONT**

U.S. EXTENSION SERVICE  
U.S. DEPARTMENT OF  
AGRICULTURE



Over 200 Years

of the

Rolling

on the

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on the

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on the



A MANUAL  
ON  
FARM MACHINERY REPAIR

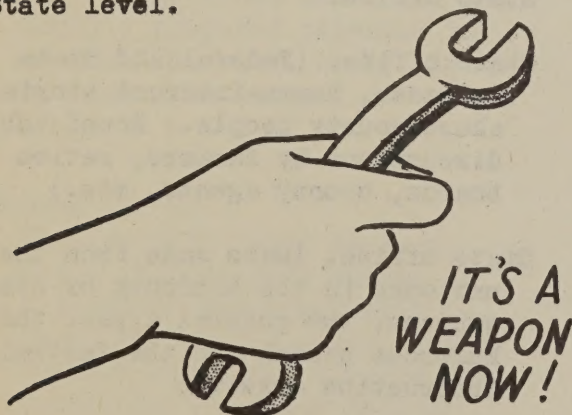
What We Have Must Last

\*\*\*\*\*  
\* This manual suggests ways by which extension \*  
\* editors and engineers can cooperate in helping \*  
\* farmers meet the critical machinery situation. It \*  
\* is not intended that all the suggestions be followed \*  
\* or tried. Remember they are offered solely as sug- \*  
\* gestions. \*  
\*\*\*\*\*

The farm machinery situation is critical. New machines are practically off the market. We must get along with what we have. This means that we will have to repair it now, take the best possible care of it, and share it with others.

Care, Repair, and Share

To help extension engineers and extension editors aid county agents and farmers we offer these suggestions for a coordinated campaign at the State level.



Responsibility for this campaign will fall most heavily on extension engineers. They will supply subject matter and will head up the entire campaign in their State. The extension editor will direct the publicity and related follow-up materials. If a

machinery committee is already functioning in the State office, so much the better.

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Distribution: Directors, extension editors, and extension agricultural engineers.



By the time this manual reaches you your campaign has probably started. But it will not be difficult to blend the elements suggested herein with those already under way. The manual for county agents will reach you shortly and can be put into immediate use.

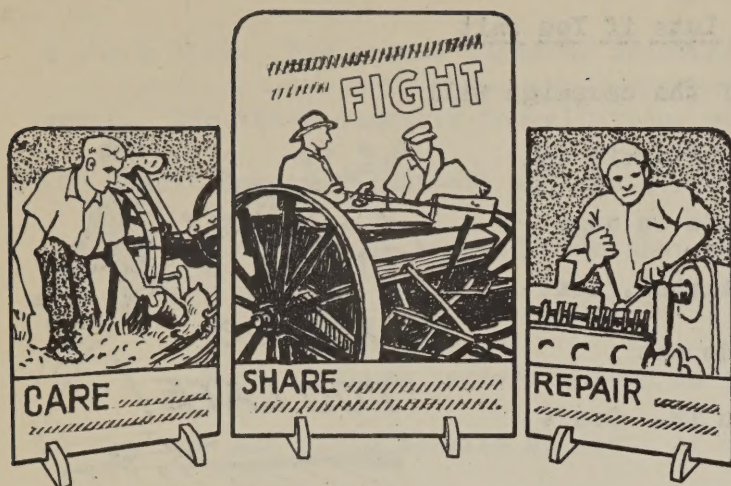
### Preparation, Action, and Follow-up

The machinery campaign is a long and continuing one, without any flash periods. Our biggest drive is to get repairs completed during the "off" season. Each phase is divided roughly into three groups--advance, action, and follow-up. Each requires certain work at both State and county levels. Let us list the definite steps and the materials required:

<u>Activity</u>	<u>Source</u>
Circular letters.	Federal handbook. State samples.
News stories.	State office. (Actual local stories about action taken by farmers in county, human-interest stories, etc.)
News briefs.	State office. (Short material about farm and home equipment.)
Fillers.	State office.
Radio stories.	State office. (Federal and State releases, human-interest stories about county people. Round-table discussions by farmers, ration boards, county agents, etc.)
Mat service.	State office. (Mats made from the cartoons in the handbook or other sources; two general types, the humorous sketch and the factual instruction drawing)
Hand-out materials.	State or county office. (1) Check lists. (Prepare for individual implements, letter size, perhaps punched for binder.)  (2) Four-page, letter-size instructions. (Containing pithy details of specific things to do, one for each implement.)



## Window displays.



This compact window display will soon be distributed through war boards. Combined with local materials, it will be found helpful in county campaigns.

### State office.

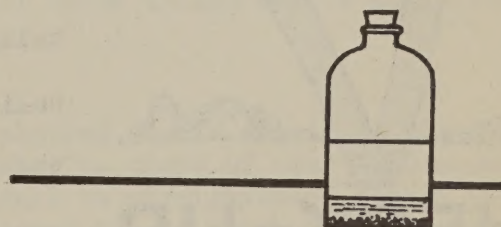
(1) Printed three-piece background supplied from USDA through war boards. To be supplemented locally with parts, photographs, broken parts, and similar materials, plus signs and cards as needed locally.

(2) Suggestions and ideas for locally prepared material in cooperation with, or by, local machinery dealers.

PM (preventive maintenance) displays. Could take the form of window demonstrations of how to clean an air filter and an oil filter, with tools needed and cards showing correct times. Show samples of new and used oils, letting sediment settle. Show amount of trash removed from radiator. Show bottle containing drainings from gasoline tanks, revealing sediment and condensed water.

### County office.

Tie-ins with local dealers. Could include such things as a piece of machinery with an index of repairs needed, to be changed every few days or each market day to a new type of machinery. Large cards could call attention to what to check.





It May Be Too Late if You Wait

Timing - The timing of the campaign will

vary from State to State depending on climatic and other conditions. However, we feel safe in suggesting that if you haven't already started, next week will be too late. Many farmers do not realize just how serious the situation is. Don't waste time arguing.



Care, Repair, and Share - Our theme is

Care, Repair, and Share. Care makes equipment last longer. Repair keeps it operating longer. Well-adjusted equipment works better and costs less to operate. Sharing makes our present equipment do more work.

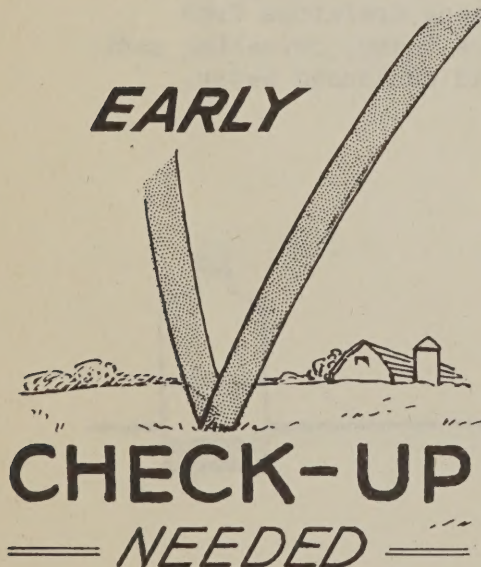
War correspondents report British surprise at the way American-made, American-operated equipment stands up in the desert. Their tanks require an overhaul every 6 or 7 days; ours run for a month. The reason is what the industry

has chosen to call PM, preventive maintenance, those steps that ward off mechanical disaster.

Encourage Early Check-up

Action - In circular letters, radio

talks, and news stories we may offer such bulletins or leaflets as we have that will help the farmer. We needn't worry about plugging the same hand-out several times; we will never saturate a county.





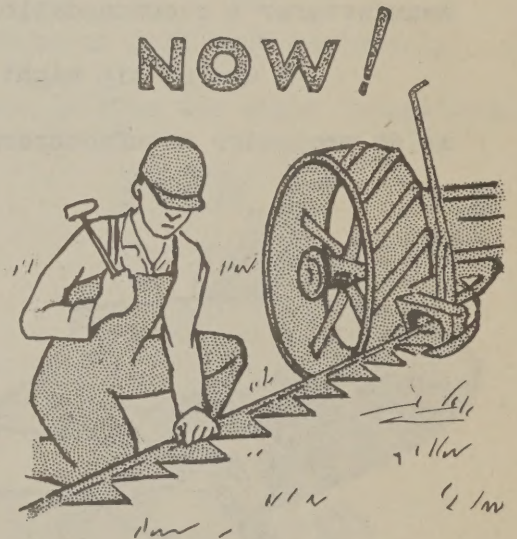
In the first four letters in the county agent handbook you will notice a sequence of themes. The first one suggests checking all equipment and offers a check list. The second suggests ordering repairs and offers the check list again. The third suggests installation, now, and offers an instruction leaflet. The fourth covers adjustment and again offers the instruction leaflet. A fifth letter, not dated, can be used more than once with changes. It sells maintenance work.

Each of these letters should be timed to go out at about the same time as the news and radio stories appear. If the same theme is presented in different ways in each medium the greatest results may be expected.

### Repair Time Is Short

Now what are some of the things we want to suggest? Let's review them. Because of the scarcity of new equipment we must repair and save what machines we now have. We can do this by checking over each piece of equipment, especially the hidden wear points, making necessary adjustments, repairing, rebuilding, or replacing worn or broken parts, buying and installing new parts, storing under satisfactory conditions, lubricating, cleaning, painting to hold down rust, and particularly, doing all these things before equipment is needed in the fields.

At the same time the equipment is checked, bolts should be tightened, braces welded in where needed, wooden parts showing signs of wear or damage reinforced or replaced. Sprung metal parts should be straightened, broken parts fixed. Parts can often be welded at a lower cost than a new part. Worn parts can often be built up and refinished. In ordinary times this would not be profitable, but in these times it is the patriotic thing to do. While the farmer is checking he can prepare his lists of parts for the next trip to town.





### Proper Adjustment Is Very Important

Adjustment is as important as checking. Extension engineers from many States confirm the belief that most troubles come from a lack of understanding of the right adjustment. An improper hitch throws undue strains on many parts, causing premature breakdowns, and wasting power. Faulty adjustment of other parts causes power loss, too.

Dull cutting edges don't do good work. Cutting edges should be sharpened, then covered with a protective coating of grease to keep them that way until needed.

Dry bearings waste power, too. Adequate lubrication, following the manufacturer's recommendations, should be "sold" over and over again.

A useful tip might be to suggest that farmers mark their implements-- as do projector manufacturers--with a small dab of red paint at each oiling

spot. This could be carried a little further by putting one paint spot on points calling for one shot a day, two on those needing grease twice a day, and so on.

(The use of paint marks has cut down failures due to faulty lubrication of movie projectors by more than 60 percent.

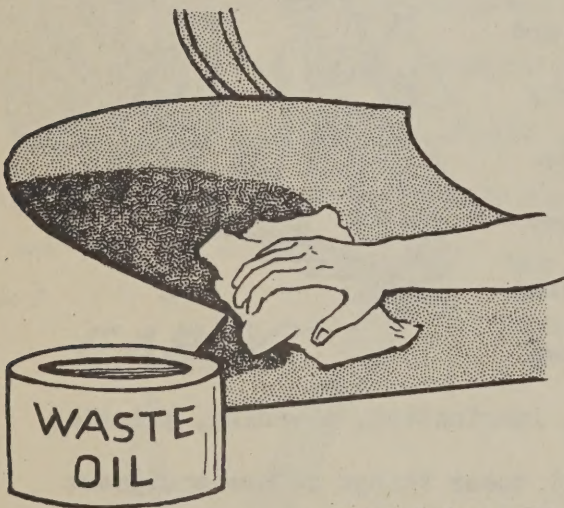
Formerly quite common, a failure due to

poor lubrication is now a rarity.)

It is not a bad idea to suggest in all climates that cutting edges and other bright parts be painted with used crankcase oil, if not heavy grease.

### Sharing Is the American Way

Ration boards are giving consideration to sharing when authorizing new equipment. Sharing is the American way. We knew what it meant 100 or 200



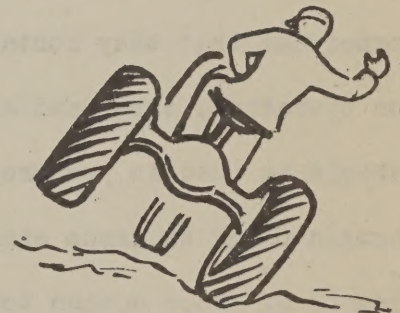


years ago. Barn raisings, husking bees, and a host of other sharing practices were common then. Many farmers share today; others do not realize how important it is. We don't know how long the war will last, but we do know food and fiber must be produced now and after it is over. So that all of us can have, we all must share. Where there are cooperatives, this feature of the campaign will be automatic. Where co-ops do not exist, sharing groups or rings can be organized, probably on a neighborhood basis through our already-established neighborhood leader system.

### Safety Posters

One of the best "silent salesmen" for safety work is the poster. Most safety posters are too vague, too symbolic, for farm safety use. An effective safety poster is brief and direct. Our only resort is to fall back on locally made posters. This need not be too difficult if we can find the right ingredients--photographs and good lettering. A good source of photographs is the local insurance agent or his district office. A photograph measuring 5 by 7 or 8 by 10 inches showing a hazard or the result of an accident makes a strong center of interest. Large lettering, at least 2 or 3 inches high, and a brief message are all that is needed. Single copies rotated around the county will do the most good. Frequently an amateur photographer in the community, or a camera club, will produce useful photographs as a contribution to the war effort.

**EVEN ~~35~~  
IS TOO FAST!**



Safety posters are of two types--preventive and horror. Preventive posters call attention to a hazard; horror posters show the effect. Both can be used at the same time. The sketch on this page shows one common accident; others will suggest themselves. The engineer and the editor might wish to produce similar photographs to be supplied or sold to county agents, or they might line up sources within the State such as insurance companies and camera clubs.



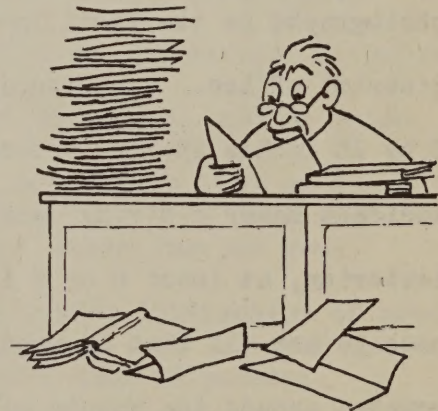
### Better Be Safe Than Sorry

Safety - With an influx of unskilled operators in many regions, some stress should be laid on safety measures. Detailed instruction in machine operation (including all the DON'TS) and specific safety recommendations will do much to aid the city-trained helper to stay alive and leave the farm with all his parts. Many people confuse a tractor with an M-4 tank and don't know a tractor can be turned over all too easily under certain conditions.

Even experienced farmers sometimes need help on safety matters. A farm is a most dangerous place to work if statistics are to be believed! We can turn that around by a sensible educational campaign.

### No Deluge of Printed Matter

The only printed matter specifically suggested for this campaign consists of the check lists and instruction sheets mentioned earlier. We recommend that these be four-page letter-size folders on substantial paper and that they contain definite instructions on operation, care, and adjustment. Sketches should be used in preference to photographs. Wisconsin plans to issue simple suggestions on the repair of these common tools:



Plows

Corn planters

Binders and combines

Silo fillers

Grain drills

Mowers and hay loaders

Manure spreaders

Gractors (PM features only)

Missouri last year put out a letter-size book of charts by the offset process, covering PM and adjustments. These were sold at 15 cents each. Other States have followed similar plans.



Several trade organizations have issued material which can be used by agents for meetings and passing out to farmers. Most of this material is free of advertising, other than a credit statement for the company which financed it. The familiar charts issued by the implement manufacturers are usually issued only to their dealers. However, they have issued maintenance booklets in large enough quantities to be given wide distribution directly by dealers to their customers. Many of the implement makers are preparing to reissue instruction books to be sold at a nominal charge through dealers.

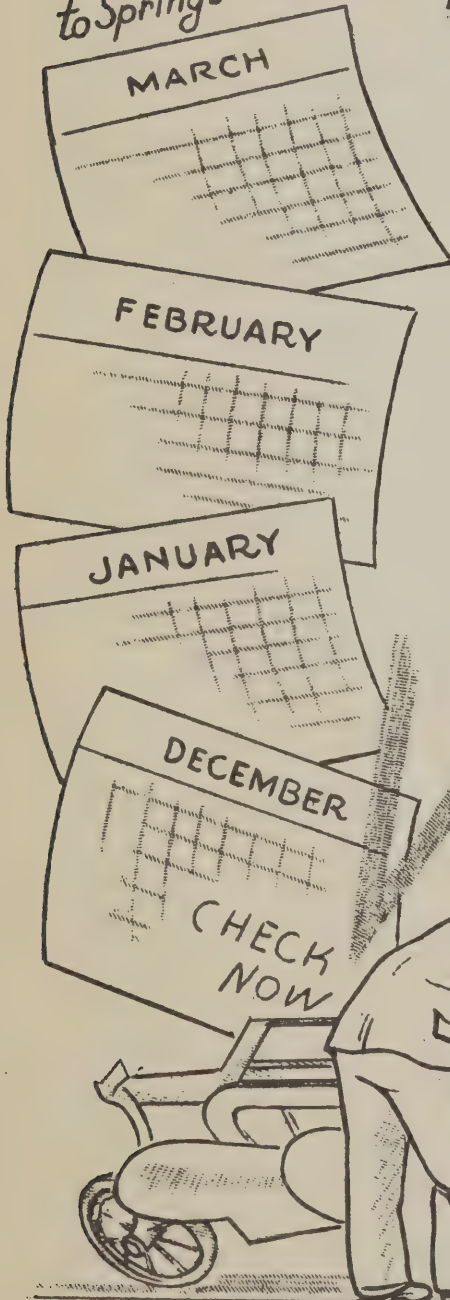


Check-Chart has issued lubrication charts for many farm implements which can be obtained through local oil companies. The Ethyl Corporation has prepared several sound slidefilms, charts, and booklets. While the county agent will not need to handle these items, he should be advised of all that are available in his territory so he can direct the farmers to dealers for these additional sources of information and assistance.



# It'll be TOO LATE! IF YOU WAIT!

4 MONTHS  
to Spring's Work



Dear Friend:

You have heard on the radio and read in the newspapers about the farm machinery situation. I don't want to go into that again. I do want to suggest that you start thinking this month about what you are going to do about it.

I have a supply of check lists for each piece of farm machinery. These check lists will help you as you go over your equipment, help you make sure you don't miss a single vital part. If you will drop into my office, or send me a post card listing the check lists you want, one for each machine, I'll be sure you get them.

While you're checking, you'll want to see if there are any parts that can be saved by rebuilding rather than by buying replacement parts. Your dealer can do this for you. You'll also want to clean your equipment, sharpen cutting edges, and grease bright parts with used oil. If there is any way I can help you with advice, I'm ready as usual to do all I can. Before you forget it, hadn't you better make a note to get the check lists?

Yours truly,

County Agent.

KEEP 'EM ROLLING ON THE FARM FRONT



CO-OPERATIVE EXTENSION WORK

—IN—

AGRICULTURAL EXTENSION  
SERVICE

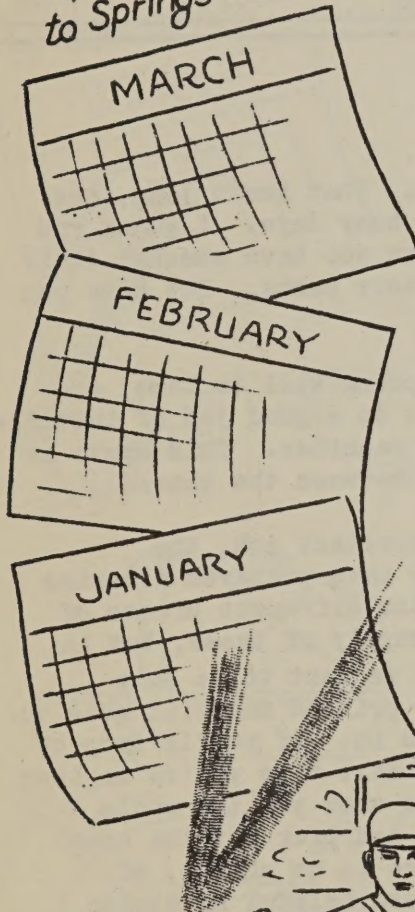
COLLEGE OF AGRICULTURE OF  
THE UNIVERSITY OF WISCONSIN  
U. S. DEPARTMENT OF AGRICULTURE  
COUNTY BOARD OF SUPERVISORS,  
CO-OPERATING

AGRICULTURE AND HOME ECONOMICS  
STATE OF WISCONSIN

COUNTY AGRICULTURAL  
REPRESENTATIVE WORK

# It'll be TOO LATE IF YOU WAIT!

Only 3 MONTHS  
to Spring's Work



Dear Friend:

Yes, it is getting late. Only 3 months to spring's work. That doesn't leave much time to get those repair parts. If you didn't get the check list I offered last month, it still isn't too late, if you act right NOW. That word NOW is awfully important these days.

If you get your check list NOW, Make out your parts order NOW, and get it to your dealer NOW, when time comes to roll out and tackle the spring work, you'll be ready.

While we think of it, your dealer is a pretty busy man and you can save a lot of time and money if you'll do the simple repairs yourself, NOW.

That will free his mechanics for the important jobs that require a mechanic's skill.

If you haven't checked your machinery, do it NOW.

If you haven't ordered your parts, do it NOW.

Very truly yours,

County Agent

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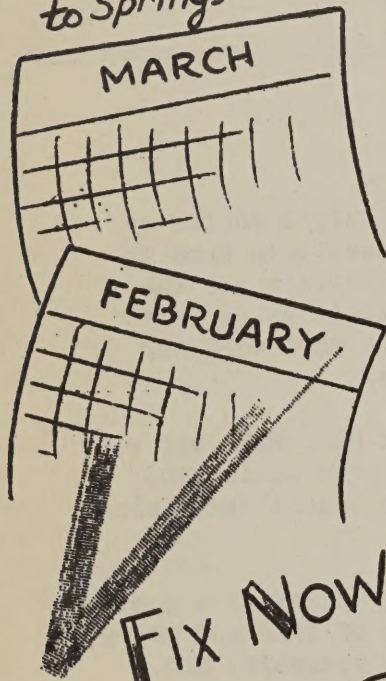
KEEP EM ROLLING ON THE FARM FRONT

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*It'll be TOO LATE!*  
**IF YOU WAIT!**

*Just 2 MONTHS  
to Spring's Work*



Dear Friend:

Only two months to go. That isn't long, the way time moves along these busy days. I guess you were one of the wise farmers who have checked their machines over and bought their parts. But have you put them in shape yet?

First thing we know spring will be here, and there just won't be time to do a good job of installing those new parts on the machines. This month is a good time to do that, in between the chores.

To help you on this important job, the engineers at the University have prepared a series of helpful leaflets about the different pieces of farm machinery. I have a supply of these, but in

these war days we want to be sure every piece of printed material gets to a man who needs it. If you'll drop by the office the next time you're in town I'll be glad to show you the whole series and you can pick out the ones you need. There is no charge, of course, for these helpful Extension Service leaflets.

Be sure to drop in and get yours, and in the meantime, look over your machinery and be sure you have finished all the repairs you'll need.

Very truly yours,

County Agent



**KEEP 'EM ROLLING ON THE FARM FRONT**



CO-OPERATIVE EXTENSION WORK

—IN—

AGRICULTURAL EXTENSION  
SERVICE

COLLEGE OF AGRICULTURE OF  
THE UNIVERSITY OF WISCONSIN  
U. S. DEPARTMENT OF AGRICULTURE  
COUNTY BOARD OF SUPERVISORS,  
CO-OPERATING

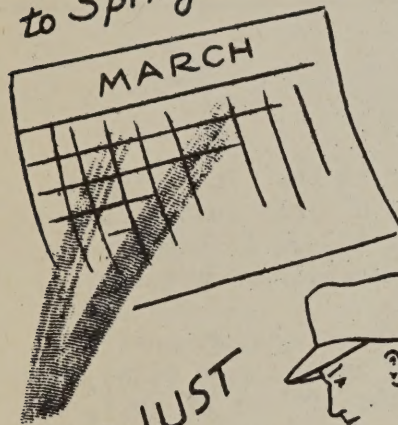
AGRICULTURE AND HOME ECONOMICS  
STATE OF WISCONSIN

COUNTY AGRICULTURAL  
REPRESENTATIVE WORK

*It'll be TOO LATE*

*ONE SHORT MONTH  
to Spring's Work*

**IF YOU WAIT!**



Dear Friend:

Did you know it is cheaper to plow right? That sounds like a silly question but it really isn't. The engineers at the University have found out that machinery properly adjusted (and most farm machines aren't) can be pulled with less gas and less strain on vital parts than machines improperly adjusted.

We can't waste either gasoline or machines these days, so I want to call your attention to a leaflet I have, showing the right way to adjust a plow for best results. I have others on other machines, too, and they are yours for the asking. They show how to adjust every machine so you get the best results with the least effort and the least strain.

I'm sure you'll want to look the whole series over so I'm saving yours here in the office against your next trip to town. You'll find them easy to understand, with lots of pictures showing just how to make the adjustments.

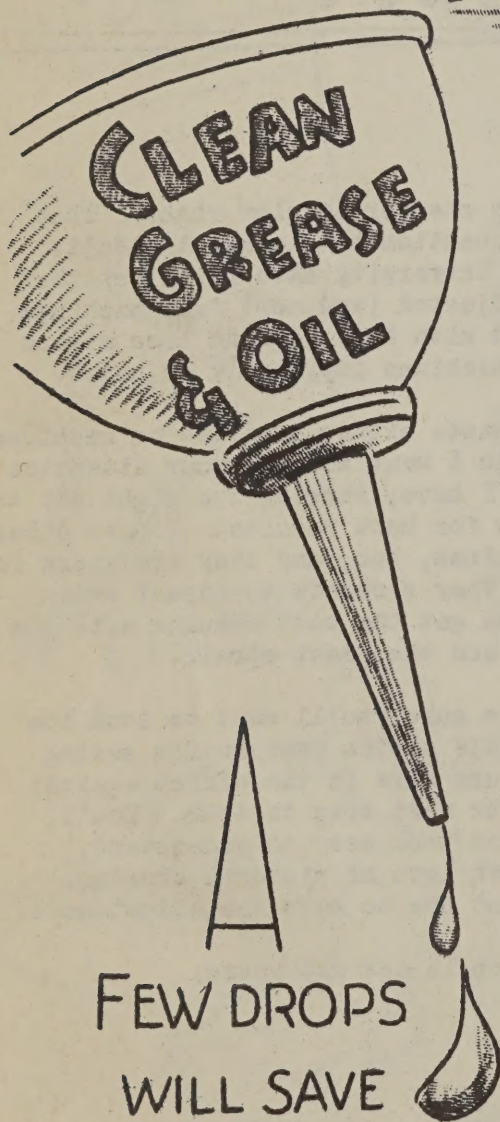
Drop in and get yours,

County Agent

**KEEP 'EM ROLLING ON THE FARM FRONT**



# It'll be TOO LATE IF YOU WAIT!



Dear Friend:

The engineers have named it PM. That stands for Preventive Maintenance, a highfalutin name that simply means fixing it before it happens. The success of PM lies in cleanliness and lubrication.

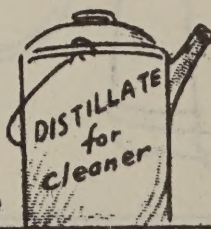
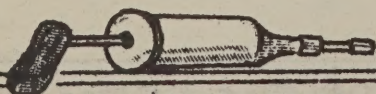
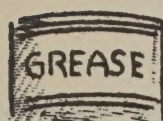
Farm machinery operates in the worst possible conditions. Dust, mud, and heavy loads cause lots of wear. By keeping down the effects of grit, and by oiling and greasing as we should, we can make machines last longer and be cheaper to operate.

American-operated tanks in the Libyan desert run four or five times as long as British-operated tanks. Why? Simply because our boys keep them clean and oiled. You can do the same with your farm weapons.

1. Read the instruction book again.
2. Follow a regular lubrication schedule.
3. Keep the radiator clean; avoid overheating.
4. Keep the air filter clean and working.
5. Keep the oil filter clean or recharge.
6. Use good oil and grease.
7. Clean off the oiling and greasing points before applying new lubricants.
8. Don't run the tractor too hot in summer.
9. Grease attachments as well as tractor and as often as needed.
10. Read the instruction book again--and again.

Yours truly,

County Agent



KEEP 'EM ROLLING ON THE FARM FRONT